Tetra Tech

1881 Campus Commons Drive♦ Suite 200♦ Reston, Virginia 20191♦ (703) 390-0600♦ FAX (703) 391-5876

September 13, 2013

Mr. Francis Egbo
District Department of the Environment
Land Remediation and Development Branch
Brownfields/Voluntary Cleanup Program
1200 First Street, N.E. 5th Floor
Washington, DC 20002

Proposal – Subsurface Environmental Site Assessment
Long Brother's Cleaners
655 Lebaum Street SE
Washington, DC 20032

Dear Mr. Egbo:

Tetra Tech is pleased to submit this proposal and cost estimate in response to your request to provide environmental consulting services at the above-referenced property (Subject Property). This proposal addresses tasks including:

- Providing subsurface utility location;
- Conducting a subsurface assessment;
- Completing soil vapor and indoor air quality sampling; and
- Preparing a report that documents all project activities.

According to the District Department of the Environment Memorandum with the subject of On-Site Permit Exemption for Site Remediation dated June 13, 2013, it is Tetra Tech's assumption no permits are required for the work described in this proposal. The memo states if a person is performing a response action under the authority of D.C. Official Code § 8-634.01 or the Comprehensive Environmental Response, Compensation, or Liability Act (CERCLA), and the response action includes an activity that would require a permit issued by a District department or agency, then the person is not required to submit an application for the permit to the permitting authority. Tetra Tech considers the work proposed to be part of an investigation to determine if the sites warrant a response under CERCLA.

SCOPE OF WORK

Background

According to the previously produced Phase I Environmental Site Assessment (ESA)[1], Apex Companies, LLC (Apex) indicated that one-site dry cleaning services were formerly performed at the Subject Property. Long Brother's Cleaners was identified on the Resource Conservation and Recovery Act (RCRA) Conditionally Exempt Small Quantity Generator (CESQG) database and operated a tetrachloroethene (PCE or perc)-based dry cleaning facility for approximately 60 years. Apex also indicated that a PCE-based dry cleaning agent was used at the time of site reconnaissance. Based on the

[1] Apex Companies, LLC. June 15, 2012. Preliminary Assessment, Long Brother's Cleaners, 655 Lebaum Street, SE, Washington, DC.

use of PCE in relation to dry cleaning activities for 60 years, Apex considered Long Brother's Cleaners to be a recognized environmental condition (REC).

According to Apex, Newnam and Lunson Dry Cleaners, located at 653 Lebaum Street, SE was located adjacent to the west of the Subject Property and identified on the Historical Cleaners database in 1954, 1960, and 1964. Based on the fact that PCE was used at the Subject Property and historical use of PCE in dry cleaning activities was formerly a common practice, Apex considered the adjacent historical dry cleaning facility to be a REC.

The closest childcare facility to the Subject Property is Dawn to Dusk Child Development Center located at 657 Lebaum Street, SE, Washington, DC. The childcare facility shares its western wall with the Subject Property. Due to the close proximity to the Subject Property and the number of historical dry cleaners and gas stations in the area, a potential vapor encroachment condition (VEC) for Dawn to Dusk Child Development Center exists. In addition, according to the guidance for Performing Preliminary Assessments under CERCLA, this childcare facility is considered to be a primary target due to its close proximity to the Subject Property.

Task 1000 – Private Utility Location

Tetra Tech recommends that a private utility location service be contacted to determine the location and orientation of the subsurface utilities that may exist on the Subject Property. The private location of the utilities in the work area will minimize the risk to these site features and personnel completing the subsurface assessment described below.

Task 2000 – Subsurface Assessment

In order to gain additional information regarding subsurface characteristics of the Subject Property, eight (8) soil borings will be advanced using a direct push percussion probe. Three borings will be completed adjacent to the western exterior wall of the Subject Property building (SB-1 through SB-3), two borings will be advanced in the alley to the west of the Subject Property building (SB-4 and SB-5), and three borings will be completed adjacent to the southern exterior wall of the Subject Property (SB-6 through SB-8). Soil borings SB-1, SB-3, SB-6, and SB-8 will be advanced to approximately 30 feet below grade, refusal, or until groundwater is encountered, whichever occurs first. The remaining borings (SB-2, SB-4, SB-5, and SB-7) will be advanced to approximately 15 feet below grade, refusal, or until groundwater is encountered, whichever occurs first. The boring locations will be backfilled with cuttings and hydrated bentonite pellets once sampling activities have concluded.

One soil sample will be collected from each boring location for the purpose of characterizing potential environmental impacts. Soil will be continuously collected every five feet and examined in the field for lithologic characterization and evidence of environmental impacts. If field evidence (visual, olfactory, or elevated photoionization detector [PID] readings) of contamination is identified prior to the bottom of the boring, the soil sample will be collected at the depth at which the contamination is identified. If soil impacts are not noted in the borings, soil samples will be collected from an interval between 4 to 8 feet below grade. This interval corresponds to where contamination would be expected from surface PCE releases.

Eight soil samples will be collected and submitted for laboratory analysis. Additional soil samples may be required to delineate the horizontal extent of impact, if identified (the District will be contacted to approve any out-of-scope activities prior to their completion).

If groundwater is encountered at a depth shallower than 30 feet, the boring will be terminated at the top of the groundwater-bearing zone. In order to evaluate potential groundwater contamination from historically performed activities on the Subject Property, one groundwater sample will be collected from borings SB-1, SB-3, SB-6, and SB-8.

Soil (8) and groundwater (4) samples retrieved from the soil borings will be analyzed for the following parameters (consistent with the District Requirements):

- Volatile Organic Compounds (VOC) per U.S. Environmental Protection Agency (EPA) Method 5035 with 8260B.

Task 3000 – Soil Vapor Sampling

Based on the historical operation of dry cleaning activities at the Subject Property with potential use of tetrachloroethylene (PCE), Tetra Tech will complete soil vapor sampling around the exterior and through the slab of the building located on the Subject Property. A total of four soil gas samples will be collected adjacent to the building and one sub-slab sample will be advanced through the concrete slab of the building in order to achieve a depiction of the soil vapor likely to be emitted into the building.

Sample depths will be chosen to minimize the effects of changes in barometric pressure, temperature or breakthrough of ambient air from the surface and to ensure that representative samples are collected. Therefore, at the Subject Property, soil gas probes will be installed at a minimum of two feet below ground surface (bgs). The soil gas samples will be collected using Summa canisters fitted with airflow regulators calibrated to collect the samples over an 8-hour period at a rate of 0.1 to 0.2 liters per minute (L/min) to simulate a work day.

A hammer drill will be utilized to core beneath the concrete slab inside the building and adjacent to the building and a soil gas probe will be inserted into the borehole. During the installation of the probe, hydrated bentonite will be used to seal around the drive rod at the ground surface to prevent ambient air intrusion. In addition, to prevent ambient air infiltration, the inner soil gas pathway from the probe tip to the surface will also be continuously sealed (e.g., the sampling tube will be attached to a screw adapter fitted with an o-ring and connected to the probe tip).

In accordance with the U.S. Environmental Protection Agency's (EPA's) guidance document, the sampling tubes will be small diameter (1/8 to 1/4 inch inside diameter) and made of nylon or polyethylene, which will not react or interact with the suspected site contaminants. Additionally, to avoid any cross-contamination, non-reusable (sample dedicated) sampling tubing will be discarded after the collection of each sample.

Tetra Tech will apply the EPA's recommended purging or sampling rate of 0.1 to 0.2 L/min to limit stripping, prevent ambient air from diluting soil gas samples, and to reduce the variability of purging rates. The low flow purge rate will increase the likelihood that representative samples will be collected. The purge/sample rate may be modified based on conditions encountered in individual soil gas probes.

To prevent the photodegradation of halogenated volatile organic compounds (VOCs), soil gas samples will be collected in a Summa canister, which is a gas tight and opaque/dark container. The samples will be analyzed for VOCs by EPA Method TO-15.

Soil vapor sampling cannot wholly eliminate uncertainty regarding vapor intrusion into the building located at the Subject Property. This sampling is intended to reduce the uncertainty regarding the potential for contaminants to be present in the vapor space beneath and in the vicinity of the building located on the Subject Property.

In addition, two indoor air samples will be collected from within the building over an eight hour period of time in order to simulate the conditions experienced during a full work day. The indoor samples will be collected utilizing a summa canister with an intake elevated to approximately 4 to 5 feet above grade to simulate a worker's breathing zone. These samples will also be analyzed for VOCs by EPA Method TO-15. There are many common cleaning chemicals, paints, and solvents that contain VOCs which can make it difficult to determine the source of indoor air contamination. Tetra Tech will conduct an inventory of potential VOC contaminant sources in the vicinity of each ambient air sample prior to collection of the samples. One ambient sample will also be collected from the outside (building exterior) ambient air to serve as a control. This sample will likely be collected from the western portion of the Subject Property.

Task 4000 – Phase II Report Preparation

Tetra Tech will prepare a report documenting all Phase II ESA activities. The report will include:

- Summary of field activities and observations;
- Summary and evaluation of analytical results;
- Site maps/diagrams; and
- Photographs (as appropriate).

In addition, during each task, Tetra Tech will provide verbal briefings on a daily basis to a designated client representative.

ASSUMPTIONS

- Tasks can be performed during normal business hours;
- Work areas will be accessible and will not require relocation of equipment or materials by Tetra Tech;
- All soil and groundwater samples submitted for analyses will be analyzed using an EPA CLP equivalent deliverable package to permit third-party evaluation (14-day) turnaround time;
- Accessibility for personnel and equipment on-site will not be hampered by site-, earthquake-, or weather-related conditions;
- Local/state utility company "hotline" services will be contacted to identify buried utilities located in easements. Additionally, site plans/as-built drawings provided by property owners/operators will be reviewed in an effort to identify buried utilities in the work area.

Tetra Tech will perform a visual survey of each work area for evidence of potential buried utilities prior to commencement of drilling activities;

- Field work can be completed in two days;
- All generated waste will be non-hazardous and will be returned to the boreholes as fill;
- Subsurface conditions at all soil boring locations will be penetrable using a direct-push probe rig; and
- The units included in the attached cost estimate (Table 1) will not be exceeded without prior approval.

COST AND SCHEDULE

The estimated cost to complete the scope-of-work outlined above is presented in the attached Table 1. This cost estimate includes subcontractor expenses for driller and laboratory analytical costs. Tetra Tech proposes to perform services on a lump sum basis for labor and expenses.

Field activities are expected to be completed in approximately two business days. A verbal report of findings will be delivered immediately upon completion of field activities. A written report will be issued within 10 business days following receipt of final analytical results.

Tetra Tech is pleased to provide this proposal and cost estimate for your review and consideration. Please contact Mr. Travis at (703) 390-0654 if you have any comments or questions.

Sincerely,

TETRA TECH, INC.

(b) (4)

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Environmental Scientist

Attachments: Figure 1: Proposed Soil Boring Location Map
Table 1 – Cost Estimate

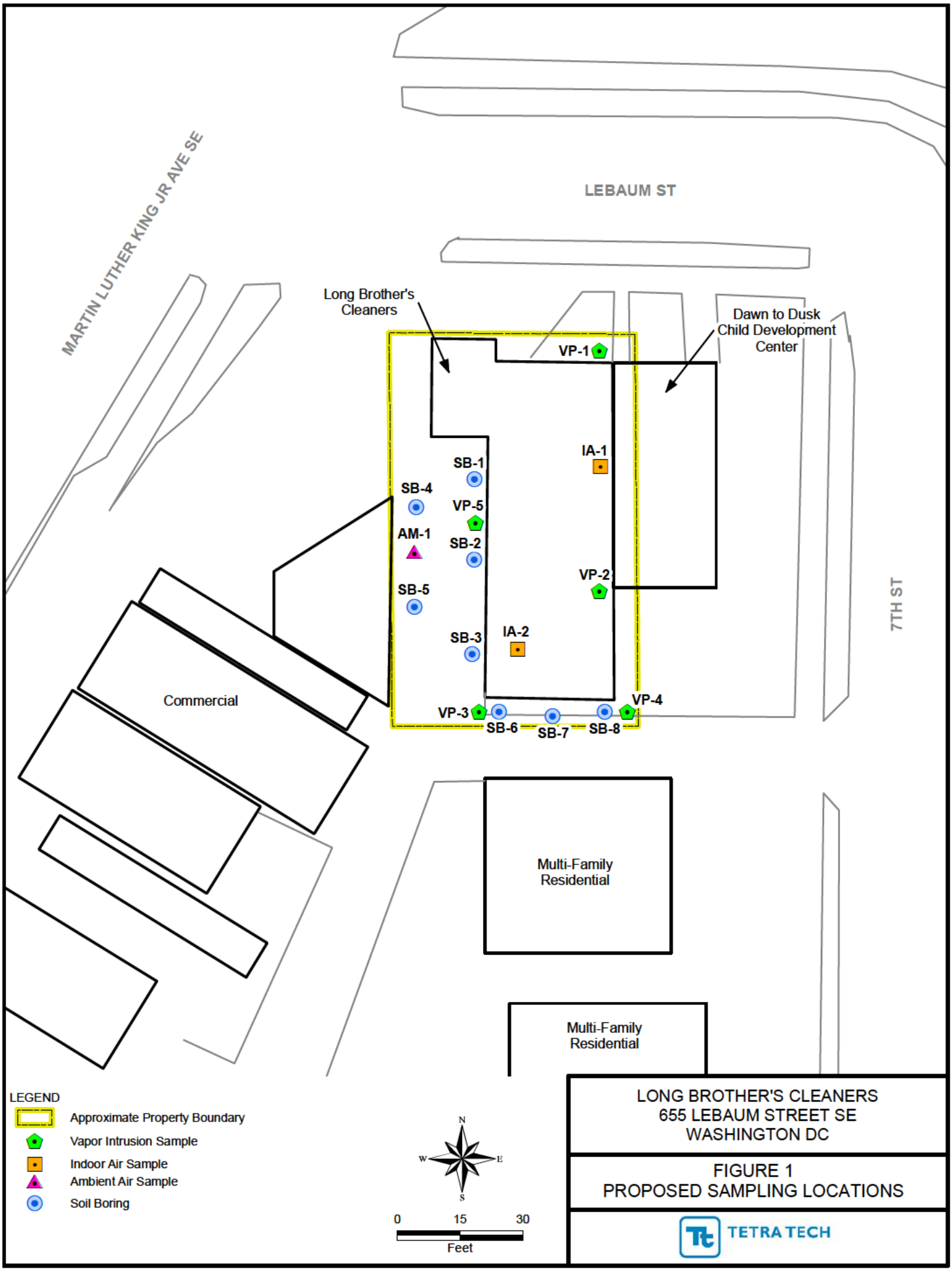
MARTIN LUTHER KING JR AVE SE
LEBAUM ST
Long Brother's Cleaners
Dawn to Dusk Child Development Center
VP-1
IA-1
SB-1
SB-4
VP-5
AM-1
SB-2
VP-2
SB-5
SB-3
IA-2
VP-3
SB-6
SB-7
SB-8
VP-4
7TH ST
Commercial
Multi-Family Residential
Multi-Family Residential
LEGEND
Approximate Property Boundary
Vapor Intrusion Sample
Indoor Air Sample
Ambient Air Sample
Soil Boring
N
W
E
S
0
15
30
Feet
LONG BROTHER'S CLEANERS
655 LEBAUM STREET SE
WASHINGTON DC
FIGURE 1
PROPOSED SAMPLING LOCATIONS
TETRA TECH
Date Saved: 9/13/2013 9:12:25 AM User: dale.vonbusch Path: C:\CADD\S\2592\LongBrothers_DC_Proposed_Sampling.mxd

Table 1: Sampling Activities Cost Estimate
Long Brother's Cleaners
655 Lebaum Street SE
Washington, DC

Tetra Tech
1881 Campus Commons Drive
Suite 200
Reston, VA 20191